

**Sept. 19, 1939.**

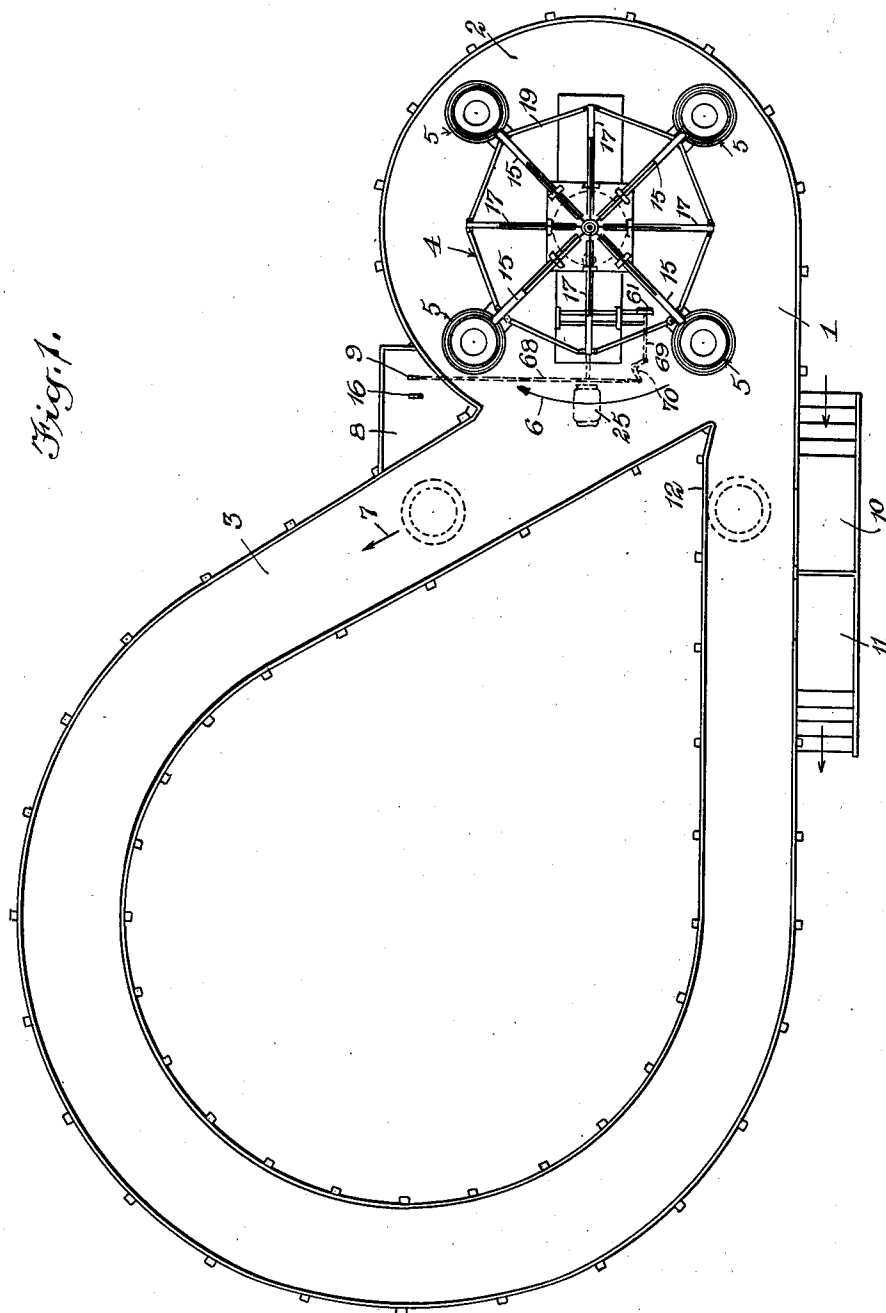
H. WITT

**2,173,703**

AMUSEMENT RIDE

Filed Jan. 13, 1938

5 Sheets--Sheet 1



**WITNESSES**

Geo. W. Maylon  
A. L. Kitchen.

INVENTOR

INVENTOR  
Harry Witt

BY

Truman Anderson & Giddy  
ATTORNEYS

Sept. 19, 1939.

H. WITT

2,173,703

AMUSEMENT RIDE

Filed Jan. 13, 1938

5 Sheets-Sheet 2

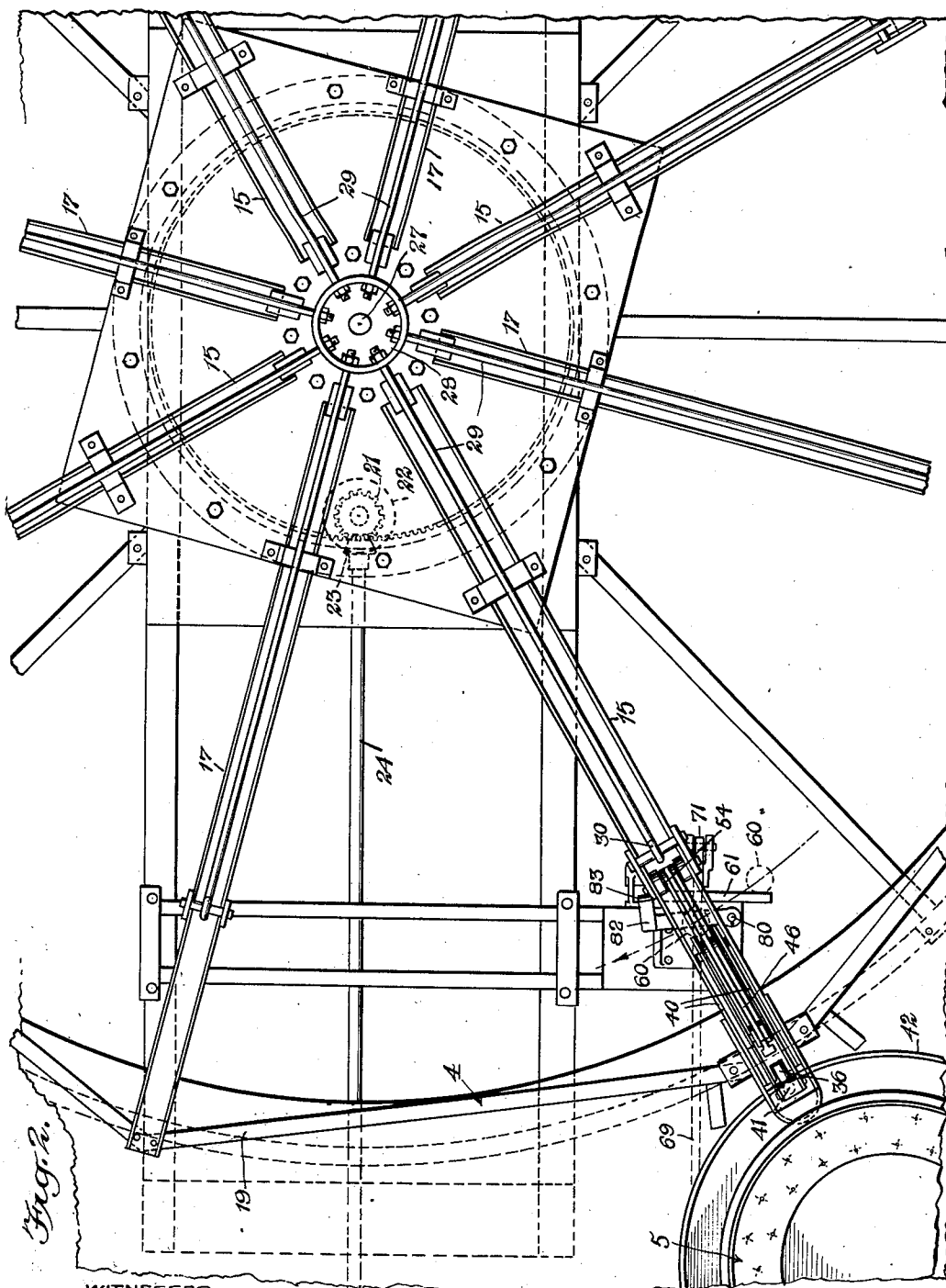


Fig. 2.

WITNESSES

*John Taylor*  
*A. L. Kitchin*

INVENTOR

*Harry Witt*

BY

*Wm. Anderson & Liddy*  
ATTORNEYS

Sept. 19, 1939.

H. WITT

2,173,703

AMUSEMENT RIDE

Filed Jan. 13, 1938

5 Sheets-Sheet 3

Fig. 3.

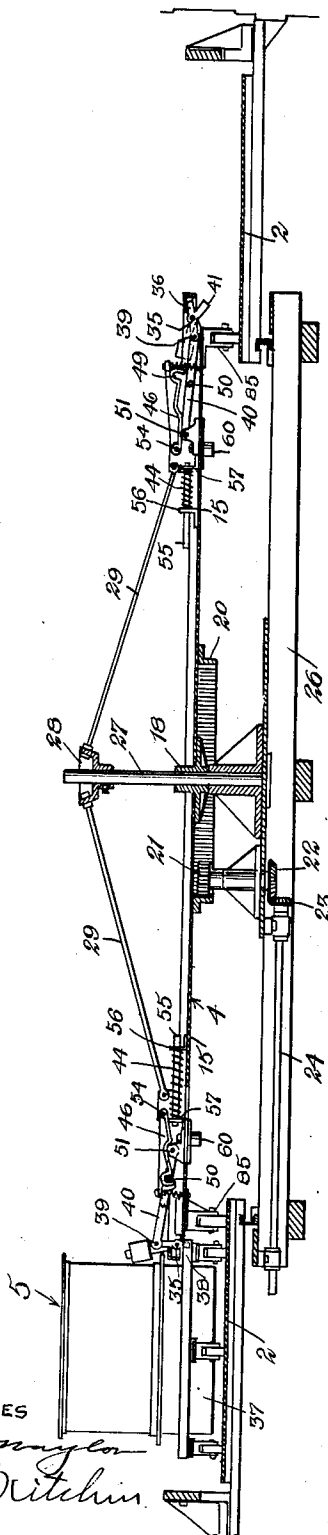
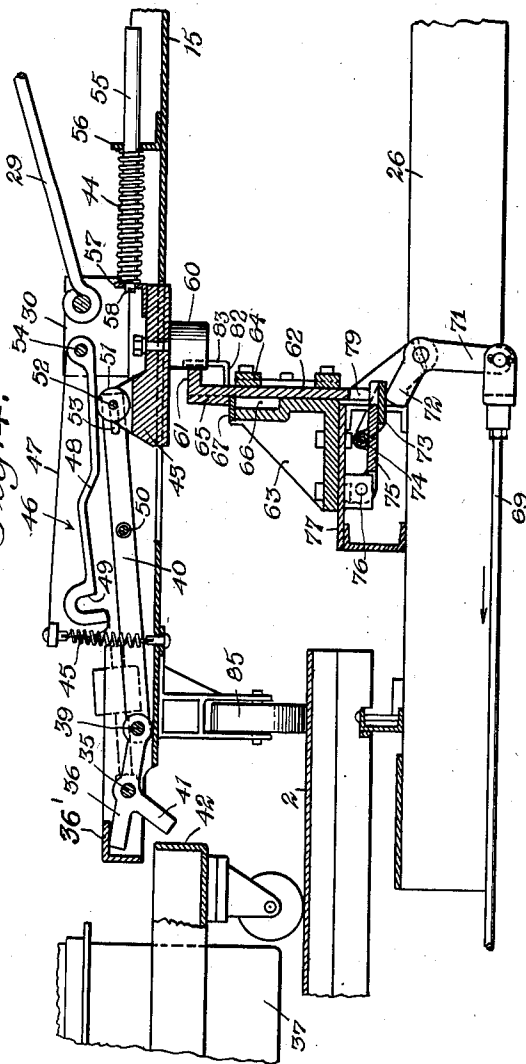


Fig. 4.



WITNESSES

*James W. Taylor*  
*A. L. Ritchie*

INVENTOR

*Harry Witt*

BY

*Wm. Anderson & Liddy*

ATTORNEYS

Sept. 19, 1939.

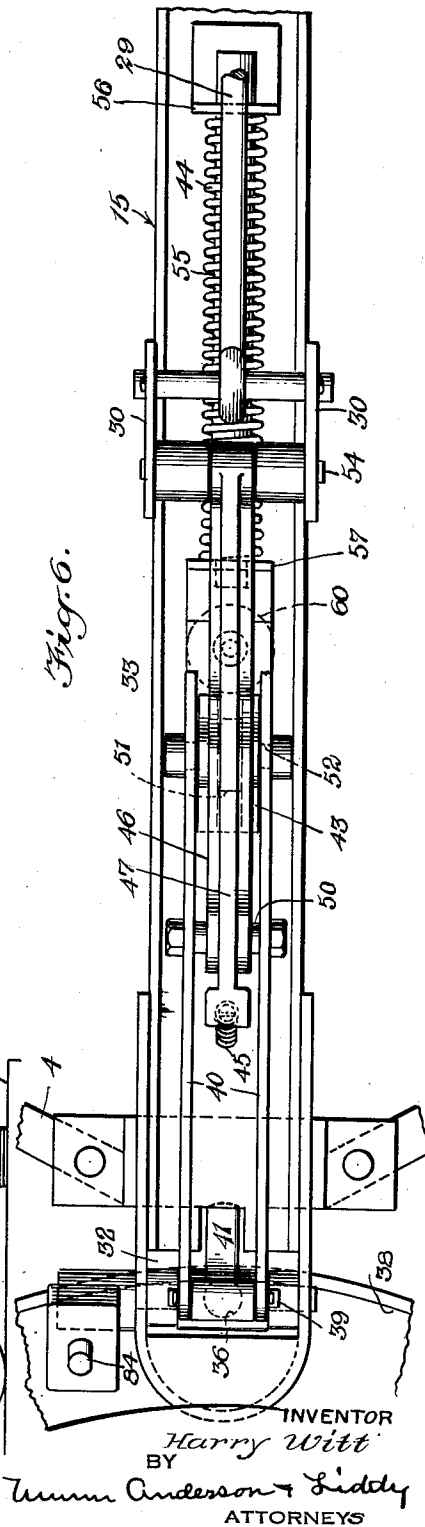
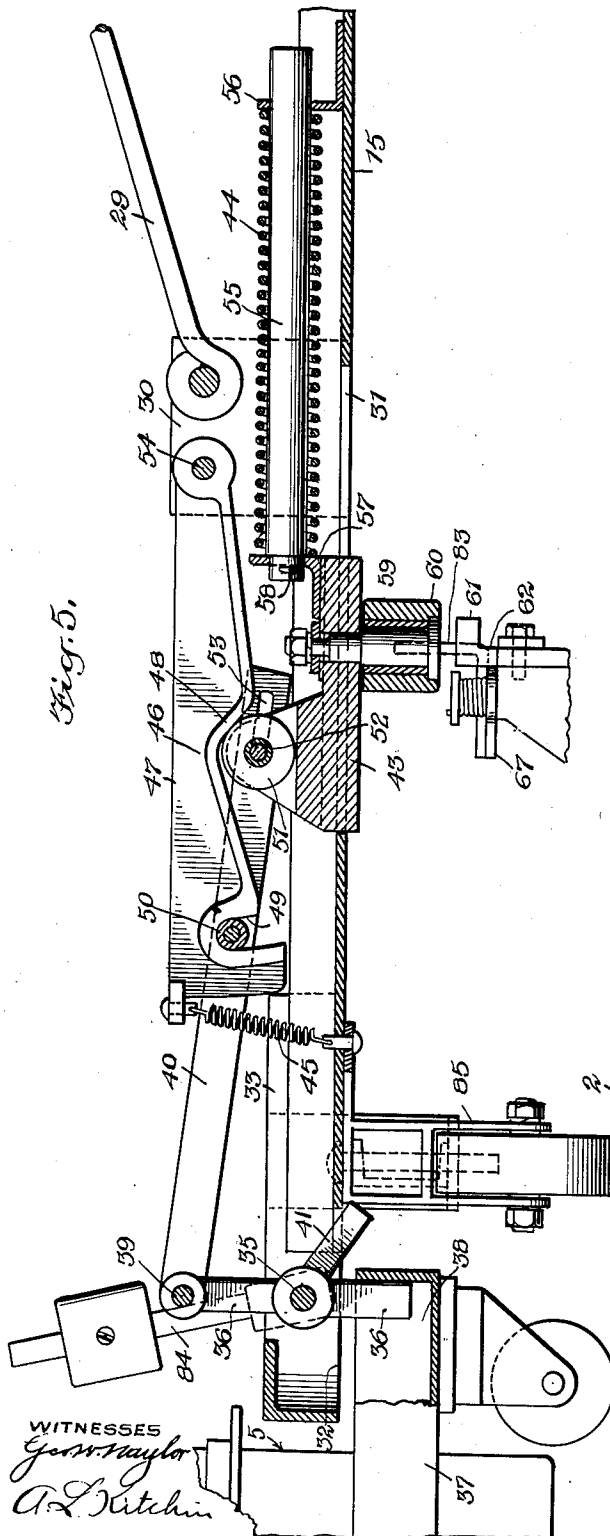
H. WITT

2,173,703

AMUSEMENT RIDE

Filed Jan. 13, 1938

5 Sheets-Sheet 4



Sept. 19, 1939.

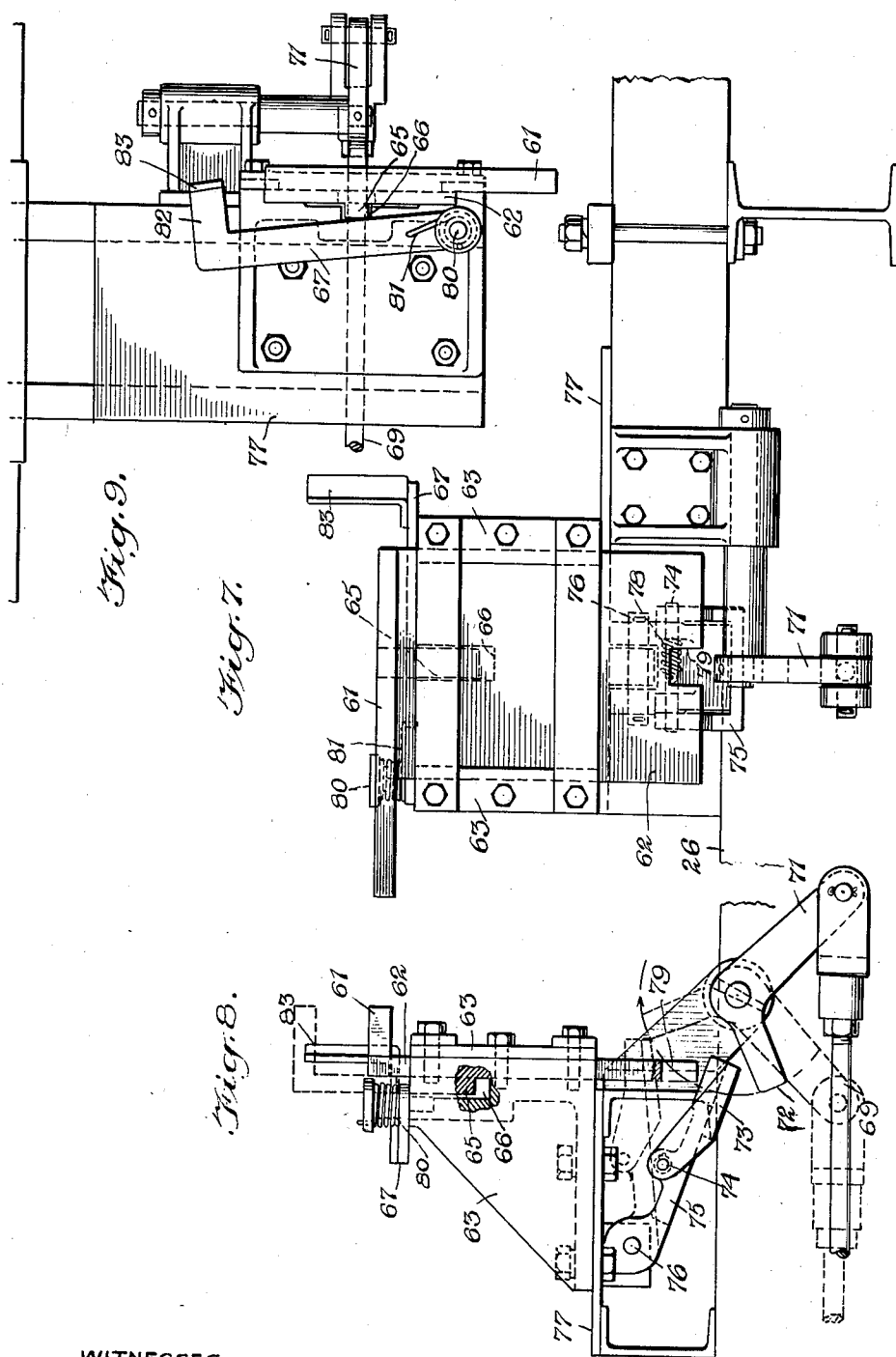
H. WITT

2,173,703

AMUSEMENT RIDE

Filed Jan. 13, 1938

5 Sheets-Sheet 5



WITNESSES

*James W. Maylon*  
*A. L. Kitchen*

INVENTOR

*Harry Witt*

BY

*Wm. Anderson & Liddy*  
ATTORNEYS

## UNITED STATES PATENT OFFICE

2,173,703

## AMUSEMENT RIDE

Harry Witt, New Rochelle, N. Y., assignor to Atlas  
Appliance Corporation, Brooklyn, N. Y., a cor-  
poration of New York

Application January 13, 1938, Serial No. 184,721

## 11 Claims. (Cl. 104—53)

This invention relates to amusement devices and particularly to an amusement ride, the object being to provide a construction which will easily grasp and easily release a vehicle to be projected over a given runway or course during the operation of the ride.

Another object of the invention is to provide an improved ride wherein there is provided a floor space, a number of vehicles adapted to move over the floor space, and a rotating and revolving projector for projecting the vehicles over a part of the floor space from time to time during the playing of the game.

A further object of the invention is to provide in a ride a latch mechanism for connecting the vehicle to a propelling or projecting structure whereby the vehicle may be released at a desired point.

A further object, more specifically, is to provide in a ride a latch for connecting a vehicle to a rotatable impeller or projector with the parts so formed that the catch or latch is locked either in an operative or inoperative position whereby the vehicle can not accidentally be disengaged.

An additional object is to provide in an amusement ride a latch mechanism for connecting a vehicle with a projecting device together with manually actuated means for releasing the latch at a desired point so that the successive vehicles being projected will all travel in the same direction over a given runway.

In the accompanying drawings:

Fig. 1 is a plan view of the complete ride in position for use;

Fig. 2 is an enlarged fragmentary top plan view of the projector shown in Fig. 1 with a vehicle connected therewith;

Fig. 3 is a sectional view on a slightly enlarged scale to that shown in Fig. 1 with a vehicle and associated parts shown in operative association therewith;

Fig. 4 is an enlarged view of the left hand part of Fig. 3 with the manually actuated release in releasing position;

Fig. 5 is an enlarged sectional view similar to the left hand part of Fig. 3 with the latch lever and associated parts in a full functioning position;

Fig. 6 is a top plan view of the structure shown in Fig. 5;

Fig. 7 is an elevation of the release mechanism shown in Fig. 4, the same looking at the release mechanism from the right in Fig. 4;

Fig. 8 is an edge view of the release mechanism shown in Fig. 7;

Fig. 9 is a top plan view of the release mechanism shown in Fig. 7.

Referring to the accompanying drawings by numerals, 1 indicates a floor space which is divided into an arena or circular platform 2 and a looped runway 3. Positioned over the circular platform 2 is a projector or impelling device 4 designed to move the cars or vehicles 5 rapidly in a circle as indicated by the arrow 6 and then release these vehicles one at a time so that they will travel along the runway 3 as indicated by the arrow 7. The operator stands in a booth or space 8 and moves the lever 9 back and forth. When this lever is moved to an extreme position in one direction the next vehicle 5 approaching the runway 3 will be released. Before the next vehicle can be released it will be necessary to move the lever 9 back to its starting point.

As shown in Fig. 1, there is provided a loading platform 10 and an unloading platform 11. Any suitable stopping or braking mechanism may be provided at point 12 so that the cars or vehicles are stopped before they reach the circular platform 2. After a car has been loaded it is moved manually over onto the platform 2 and as it approaches one of the projecting arms 15 it will automatically couple itself to the arm. It will be understood that the projector 4 is stationary at this time. Preferably after one car has been coupled as described the projector is moved or rotated until the next arm 15 is in position for receiving the next filled car. Preferably this action is continued until each of the projecting arms 15 have been provided with a car or vehicle. When this has occurred the operator on platform 8 will actuate the control lever 16 and start the projector 4 so that it will rotate at a comparatively high rate of speed. When the desired speed has been attained the operator shifts the lever 9 so that the first car will be unlatched or disengaged at the proper point whereby it will be projected along the runway 3. The unlatching mechanism is then reset and at a second desired time the unlatching mechanism is operated for projecting another car. This is carried out until all of the filled cars have been projected. The runway 3 may be of any desired kind and may be covered or uncovered as desired.

The projector 4 is preferably formed with a number of projecting arms 15 and a number of bracing arms 17, all of which are connected to a central tubular journal 18 as shown in Fig. 3. Also these arms are connected together by suitable bracing links 19 at or adjacent their outer

ends. A propelling internally geared ring 20 (Fig. 3) is secured to the various arms 15 and 17. A pinion 21 is continually in mesh with the internally geared ring 20 and is connected through a suitable shaft to a beveled gear 22 which is in mesh with beveled gear 23. A shaft 24 is connected with beveled gear 23 and with a suitable prime mover, as for instance an electric motor 25 which functions to drive the various parts. The control lever 16 is adapted to turn on and off the current to motor 25 so as to control the action thereof. The various parts just described are supported upon suitable framework 26 which may be of any desired kind. A shaft or rod 27 is carried by the post 18 and supports a bracket 28 whereby the anchoring or bracing links 29 may act to support the outer or peripheral part of the projector. Preferably a bracket 30 for each arm is rigidly secured in place and also connected with the respective links 29. The parts just described have been shown in the drawings as one embodiment of the invention, but it will be evident that other forms might be used without departing from the spirit of the invention.

In Figs. 4, 5 and 6 will be seen certain latch mechanism and also latch releasing mechanism. As illustrated in these figures the arm 15 is provided with a slot 31 and with an opening 32. Arm 15 is also provided with stiffening upstanding side flanges 33 and 34. A pin 35 is journaled in these flanges and pivotally supports the latch or latch lever 36 which when in operative position as shown in Fig. 5 interlocks with the vehicle 37. Vehicle 37 is provided with a socket 38 into which the lower end of the lever extends while the upper end is pivotally connected at 39 with a latch bar 40. An extension or projecting member 41 is preferably integral with the lever 36 and is important in that it permits the vehicle 37 to be automatically coupled to the projector.

As shown in Fig. 4, the latch 36 is pressing against the flange or abutment 36' on arm 15 and is in what may be termed an inoperative position ready to be coupled to a vehicle. When the vehicle 37 as shown in Fig. 4 is moved over to the right, the upstanding flange 42 will strike lever 41 and quickly swing the parts to the position shown in Fig. 5. This will automatically move the bar 40 to its operative position and also will act to release the slide 43 whereby the spring 44 can quickly move the same to the position shown in Fig. 5. This will permit the retractile spring 45 to quickly swing downwardly the locking lever 46 to its functioning position as shown in Fig. 5. It will be noted that this lever is provided with a stiffening web 47 and on the opposite side with a cam or offset 48 and a notch 49. Notch 49 is adapted to accommodate the pin 50 carried by the latch bar 40 intermediate its length. The cam or abutment member 48 is adapted to rest against the roller 51 pivotally mounted on the pin 52 carried by slide 43. Pin 52 extends through the slot 53 formed in the end of latch bar 40.

The locking lever 46 is pivotally mounted at 54 on the bracket 30 which as heretofore stated is rigidly secured to the arm 15. Spring 44 is supported by a guiding pin or rod 55 which slidably extends through the bracket 56 and which is connected with bracket 57 secured to slide 43 by a suitable pin 58. A journal pin 59 is bolted or otherwise rigidly secured to slide 43 so as to project therebelow. This pin carries a rotatable bearing sleeve 60 so as to reduce friction when the deflecting rail 61 strikes the same. This rail

is preferably formed integral with a vertically sliding plate 62 carried by a suitable bracket 63. This plate and associated parts forms the releasing mechanism and is shown particularly in Figs. 4 to 9 inclusive. The bracket 63 is stationary and is mounted on the framework 26 in any suitable way and is provided with bars 64 which coact with the main part of the bracket to provide a slideway for the plate 62. This plate is formed with an enlargement 65 adapted to fit into the socket 66 when plate 62 is in a lowered position, but to be supported by the lever 67 when in an operative position.

As shown in Fig. 1, the lever 9 is connected with rod 68 so as to reciprocate this rod. Rod 68 is connected to rod 69 through a bell crank lever 70 and rod 69 (Fig. 4) is pivotally connected to a lever 71 having an actuating extension 72. Extension 72 is adapted to be swung from the full line position shown in Fig. 8 to the dotted position and then back to the full line position. It will be noted that the extension 72 presses against the lever extension 73 which is pivotally mounted at 74 on the swinging arm 75 which in turn is pivotally mounted at 76 on the support 77 which is connected with the frame 26 and which supports the lever extension 73. A spring 78 acts to normally hold the bottom part of the lever extension 73 against the lever 75 but permits the same to swing in one direction away from lever 75. When the extension 72 is moved to engage the bottom of lever extension 73 and the movement is continued to the dotted position shown in Fig. 8, the members 73 and 75 will be raised and also the slide 62 will be raised to substantially the position shown in Fig. 4. The lower end of slide 62 is notched or slotted at 79 so as to permit extension 72 to return and strike the upper surface of lever extension 73 which yields by reason of its swingable mounting so that the parts eventually assume the position shown in Fig. 8.

However, the slide 62 is left in its elevated position by reason of the lever 67. This lever, as shown particularly in Fig. 9, is pivotally mounted at 80 and is acted upon by the spring 81 to swing the same to the right or to the position shown in Fig. 4 whereby the lever will be positioned beneath the extension 65 of slide 62. The lever 67 is provided with a laterally extending projection 82 having an upstanding wall 83. When lever 9 shown in Fig. 1 is pulled over to one of its extreme positions extension 72 will be moved over to the dotted position shown in Fig. 8 and slide 62 and associated parts will be elevated to the position shown in Fig. 4 where they are held by the lever 67. They remain in this position until the roller 60 of the next arm 15 strikes the rail 61. The rail 61 is positioned at an angle to the normal travel of the roller 60 as shown in Fig. 2, and consequently the roller 60, slide 43 and associated parts are moved radially inwardly to the position shown in Fig. 4. Immediately after this has taken place the roller 60 will strike the wall 83 and swing the same to the left as shown in Fig. 9 whereby lever 67 will be moved from beneath the enlargement 65. This will permit slide 62 to drop down to the position shown in Fig. 8 under the action of gravity. In this way the rail 61 is moved out of the way of the next arm 15 and associated parts.

When the roller 60 first strikes the rail 61 it will pull the slide 63 and pin 52 to the right as shown in Fig. 5 without affecting the latch 36. This result is secured by reason of the fact that

pin 52 is moving in slot 53. This action continues until the roller 51 acting on the abutment or cam 48 raises the locking lever 46 for disengaging the pin 50 from the hook or notch 49. The disengagement takes place approximately at the same time that the pin 52 reaches the right hand end of the slot 53 as shown in Fig. 5. The continued movement of the slide 43 and associated parts will then quickly pull the latch lever 36 to a disengaged position and the weighted lever 84 secured to shaft 35 will be permitted to move the parts past dead center as shown in Fig. 4. This will prevent spring 44 from moving slide 43 forwardly any further than the length of slot 53. The parts remain in this position until the next vehicle 37 strikes the extension 41. It will therefore be seen that when lever 9 in Fig. 1 is swung over to one of its extreme positions rail 61 will be elevated to unlatch the latch mechanism on the next arm 15 which approaches the same. As soon as the latch mechanism has been released the rail 61 and associated parts are released so as to automatically move to a non-functioning position. The operator may, if he desires, release the next car immediately or may wait for a desired time so as to space the cars or vehicles as they move over the runway 3.

While the guy members or rods 29 may be used to support the outer part of the projector, preferably there is provided a supporting roller 85 with a suitable bracket at the outer end of each of the arms 15. These rollers operate on the platform 2 so as to accurately support the outer end of the arm so that the latch or latch lever 36 may always function properly. While the internal gear latch 20 and associated parts have been set forth as a desirable form of driving mechanism, it will be evident that other forms may be used without departing from the spirit of the invention. Also it will be evident that the release mechanism shown in Figs. 4, 7, 8 and 9 is fixed in a given position so that the various vehicles are always released at a given point although they may be released with different degrees of momentum. In case it is desired to release the vehicles at a different point it will be necessary to shift the bracket 63 and associated parts to a new position. By thus fixing the point where the vehicles are to be released the operator can make no mistake when releasing a vehicle as the parts will automatically function to release the vehicle at the proper point whereby the vehicle is projected along the entrance to the runway 3.

I claim:

1. In an amusement ride, a support, a rotatable projector having a plurality of projecting arms carried by said support, a latch mechanism on the outer end of each of said arms for detachably connecting a vehicle thereto, said latch mechanism including a vehicle engaging member pivotally mounted on said arm to swing in a vertical plane, a slide carried by said arm, a latch bar pivotally connected at one end to one end of said vehicle engaging members and at the other end to said slide for retaining said vehicle engaging member in a vehicle engaging position, means carried by said arm for maintaining said latch bar in functioning position, means carried by said vehicle engaging means, coacting with said latch bar for retaining the vehicle engaging member in a non-engaging position, manually actuated means carried by said support for causing said latch bar and associated parts to move said vehicle engaging member to a released

position, and means carried by said vehicle engaging member actuated by a vehicle as it approaches said projecting arm for moving said vehicle engaging member, the latch bar and associated parts to functioning positions.

2. An amusement ride comprising a revolvable projector, a latch mechanism carried by said projector including a movable vehicle engaging member for detachably connecting a vehicle to said projector, said latch mechanism including a sliding latch bar pivotally connected at one end to one end of said vehicle engaging member, a pin extending from said latch bar intermediate its length, means carried by said projector including a pivotally mounted hook-shaped locking arm engaging said pin for locking said latch bar against independent movement, and spring means carried by said projector acting on said locking arm to prevent accidental movement thereof.

3. An amusement ride comprising a revolvable projector, a latch mechanism for detachably connecting a vehicle to said projector, said latch mechanism including a latch lever pivotally mounted on said projector to swing in a vertical plane, a latch bar having one end pivotally connected to the upper end of said vehicle engaging member, a slide carried by said projector, means for pivotally and slidingly connecting the other end of said latch bar to said slide, a pin connected to said latch bar intermediate its length, and a locking member pivotally mounted on said projector formed with means interlocking with said pin and said slide for preventing movement thereof when the locking member is in functioning position.

4. An amusement ride comprising a support, a revolvable projector, a latch carried by said projector for detachably connecting a vehicle to said projector, said latch having a projecting arm positioned to engage and be moved by a vehicle as it approaches the projector for moving said latch into functioning position, means carried by said projector for locking said latch in functioning position, and manually actuated means carried by said support for moving the first mentioned means and said latch to non-functioning position.

5. An amusement ride comprising a rotatable projector, a latch for detachably connecting a vehicle to said projector, said latch including a lever pivotally mounted intermediate its ends on said projector, a latch bar provided with a pin and having one end pivotally connected to the upper end of said lever, said latch bar at the other end having a longitudinally positioned slot, a slide carried by said projector, a pin carried by said slide positioned to project through said slot whereby there will be an independent movement between said slide and said latch bar to the extent of the length of said slot, and a swinging locking arm carried by said projector provided with means engaging said slide to prevent movement thereof in one direction, and means carried by said projector engaging said pin for preventing movement of said latch bar in either direction.

6. An amusement ride comprising a projector provided with an arm movable in a horizontal plane so that the outer end will describe a circle, a latch carried on the outer end of said arm for releasably connecting a vehicle thereto, means carried by said arm for locking said latch in functioning position, and means carried by said arm actuated by a vehicle approaching the outer end



of said arm for moving the latch from a non-functioning to a functioning position.

7. An amusement ride comprising a projector provided with an arm movable in a horizontal plane so that the outer end will describe a circle, a latch carried by said outer end for releasably connecting a vehicle thereto, an extending arm carried by said latch adapted to be actuated by a vehicle approaching the projector for moving the latch from a non-functioning position to a functioning position, and means carried by said arm automatically moving into functioning position for locking said latch in functioning position as soon as said approaching vehicle has actuated said extending arm.

8. An amusement ride comprising a projector provided with an arm movable in a horizontal plane so that the outer end will describe a circle, a latch releasably connecting a vehicle to said arm, a pivot pin carried by said arm for pivotally supporting said latch, said latch being swingable to a functioning from a non-functioning position and the reverse, a weight connected with said pivot pin for normally holding said latch in non-functioning position, a swing lock carried by said arm for positively locking said latch in functioning position, and a spring connected with said arm and said swing for moving said lock quickly to a locked position as soon as said latch reaches a functioning position.

9. An amusement ride including an arm movable so that the outer end will describe a circle, a latch lever carried by said outer end for releasably connecting a vehicle to the lower end of said arm, a latch bar having one end pivotally connected to the upper end of said latch lever, said latch bar having a longitudinally extending slot at the other end, a slide carried by said arm, a pin extending from said arm projecting through said slot, a pin carried by said latch bar, a locking lever pivotally mounted on said arm, said locking lever having an abutment and a notch, a roller mounted on the pin carried by said slide, a retractile spring connected at one end to said arm and at the other end to said locking lever functioning to swing said locking lever until said abutment rests against said roller and said notch accommodates the pin on said latch bar for locking the bar against movement, a second spring carried by said arm acting to move said slide to a position whereby said locking lever may function, and manually actuated means for causing said

slide to move against said second spring for causing said roller to press the abutment on said locking lever and raise the same to a non-functioning position whereby said latch and latch bar will be released.

10. An amusement ride comprising a platform, a projector formed with an arm movable in a horizontal plane so that the outer end will describe a circle, a latch carried by said outer end for releasably connecting a vehicle to said arm, means carried by said arm for normally holding said latch in functioning position, means slidably carried by said arm for causing the first mentioned means to move to a released position, said last mentioned means including a depending member and manually actuated means carried by said platform for moving said depending member along said arm, said manually actuated means including a vertical slide provided with a projection, a support carried by said platform, a spring-pressed arm carried by said support positioned to move beneath said projection for supporting said slide in a raised position, an articulated member carried by said support for engaging the lower end of said slide and raising said slide, said slide at the lower end having a slot, and a swinging lever carried by said support positioned to engage and swing said articulated member in a direction for causing said articulated member to raise said slide, said swinging lever being adapted to move back to its starting point through the slot in said slide ready for a second actuation.

11. An amusement ride comprising a floor space, a vehicle provided with a socket, a revolving projector having a projecting arm adapted to have its outer end moving in a circle, latch means releasably connecting said vehicle to said projector, said latch means including a latch lever carried at the outer end of said projecting arm, a reciprocating and pivoted latch bar carried by said projecting arm for moving the latch lever into and out of said socket, a swinging locking arm carried by said projecting arm for locking said latch lever against independent movement and manually actuated means carried by said floor space for moving said locking arm in a non-functioning position to release the vehicle from said projector so that the vehicle will be free to move under its own momentum over said floor space.

HARRY WITT.